

Remarks

This is responsive to the action mailed April 11, 2007 ("Office Action"). The amendments and accompanying remarks herein do not introduce new matter and are only clarifying in nature, not made for reason of patentability in response to a rejection over a cited reference.

Reopened Prosecution

Applicant gratefully acknowledges the Pre-Brief Panel's decision to reopen prosecution in this case.

Status of Claim 1

Via the telephone interview request submitted herewith, Applicant respectfully seeks clarification as to the status of claim 1.

Applicant's amendment of claim 1 in its after-final response filed 6/5/2006 was not entered according to the advisory action of 6/20/2006. The Office Action does not mention whether the amendment is entered or not, but it does recite the amended claim language in the rejection of claim 1.¹ Thus, in this response Applicant assumes that its after-final amendment was entered.

Section 103 Rejection Over Sasamoto '541

Claim 1 stands rejected as allegedly being unpatentable over Sasamoto '541. Via the telephone interview request submitted herewith, Applicant respectfully seeks clarification as to whether the Office agrees that the *raising* step is a condition precedent to the *moving* step.

Otherwise, Applicant has amended claim 1 to more particularly recite moving the transducer unidirectionally at both the maximum and minimum fly heights. Applicant believes this feature was previously in claim 1, because the claim language recited moving the transducer to the beginning position at the maximum fly height and away from the beginning position at the minimum fly height. The amendment is intended to more particularly point out and distinctly claim that which is patentable subject matter in order to facilitate progress on the merits in this case.

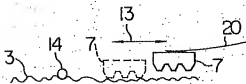
The skilled artisan reading Sasamoto '541 readily understands that it discloses a routine for sweeping the head 7 bidirectionally across the entire disk 3 storage area at each of multiple disk speeds. The minimum disk speed for the sweeping routine is the initial speed at which the disk starts spinning, when the head still contactingly engages the disk. In other words, Sasamoto '541 discloses beginning the sweeping routine at a zero (contacting engagement) fly height:

Referring to FIG. 4, when the magnetic disk 3 starts to rotate, the magnetic head 7 is in contact with the magnetic disk 3 as indicated by the broken line. In this condition in which the disk 3 rotates with a small sliding energy, the pulse motor 9 (see FIG. 1) is operated to move the magnetic head 7 in the radial direction of the magnetic disk 3 (in the arrow-13 direction in FIG. 4) so that the magnetic head 7 slides on the whole surface of the magnetic disk 3. Therefore, the dust 14 deposited on the magnetic disk surface collides with the magnetic head 7, thereby being peeled off from the magnetic disk surface.
(Sasamoto '541 col. 3 lines 8-19, emphasis added)

Note that the arrow-13 direction is bidirectional:

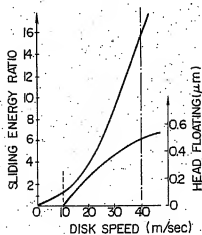
¹ See, e.g., pg. 2 line 12 reciting "transducer" instead of "read/write head" and "at a radial position."

FIG. 4 PRIOR ART



Sasamoto '541 further discloses first achieving a non-zero fly height at a disk speed of 10 m/sec, and achieving a maximum fly height (shown by solid lines in FIG. 4) at a steady state disk speed of 40 m/sec:

FIG. 3 PRIOR ART



From FIG. 3, it will be seen that the peripheral speed of the disk is 40 m/sec at the steady state as compared with the 10 m/sec at the time the head 7 starts to float away from the disk 3.

(Sasamoto '541 col. 2 lines 34-37)

However, Sasamoto '541 ceases the sweeping routine before the disk is accelerated to the steady state speed, to avoid damage to the disk storage space resulting from a collision between the head and a dust particle:

The sliding energy ratio at 40 m/sec is 16 times as large as that at 10 m/sec. Thus, at the steady state, the disk is scraped, upon collision, with such large sliding energy as mentioned and soon the recorded information is destroyed. The magnetic disk storage unit is used for the main file in a computer system, and therefore the destruction of the information recorded in the magnetic disk storage unit will lead to the breakdown of the system, or will cause the most important problem.

(Sasamoto '541, col. 2 lines 37-46)

Sasamoto '541 actually ceases the sweeping routine at a disk speed of 10–20 m/s:

It takes 4 to 5 seconds for the spindle motor 5 to start to rotate and for the revolution rate of the magnetic disk 3 to change from a range of small sliding energy to a range of large sliding energy, or speed of 20 m/s. It takes about 0.1 second for the magnetic head 7 to once reciprocate over the full tracks. Therefore, the magnetic head 7 can reciprocate 40 to 50 times during the time of 4 to 5 seconds. Detecting that the head 7 has reciprocated 40 to 50 times, the head 7 is stopped from moving.

(Sasamoto '541 col. 3 line 64 to col. 4 line 5)

In the case of continuous operation of the magnetic disk storage unit, a time period in which there are few demands for access to the storage unit (for example, at midnight) is selected, or periodic time intervals are set. In these cases, the revolution rate of the magnetic disk is reduced by decrease of the source voltage of the motor 5 to a low value (10 m/s-20 m/s), under which the magnetic head 7 is reciprocated in the radial direction of the magnetic disk 3 as described above.

(Sasamoto '541 col. 4 lines 11-19)

The Office Action reads the first recited feature, raising a fly height of a transducer to a maximum setting at a radial position, on the steady state disk speed (40 m/s) of

Sasamoto '541.² However, the Office Action then reads the second recited feature, *moving*

² Office Action pg. 2 lines 12-15, citing Sasamoto '541 col. 2 lines 8-12 and col. 1 lines 39-43.

the transducer radially while substantially at the maximum fly height to a beginning position, on the reciprocating of the head during low disk speed (less than 10 m/s) when the head contactingly engages the disk in Sasamoto '541.³ This claim interpretation is clearly erroneous because the *raising* step and the *moving* step are explicitly recited as occurring with respect to the same (maximum) fly height.

The Office Action also reads the third recited feature, *lowering the transducer to a minimum fly height...and executing a move cycle routine...*, on Sasamoto's disclosure of reciprocating the head when the disk is rotating at 10-20 m/s. However, this too is a clearly erroneous interpretation because Sasamoto '541 clearly discloses the minimum fly height occurring in the disk speed range less than 10 m/s.

Thus, the Office has failed to show obviousness for failure to substantiate evidence that the cited reference teaches or discloses all the recited features of claim 1. Based on that fact, and in view of the clarifying amendment to claim 1, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 1.

In attempting to support the rejection the Office Action calls into question Applicant's previous argument that the *moving* step cannot begin until completion of the *raising* step:

Regarding to remarks (filed on 7/5/06) on page 2:
· applicant argued that Sasamoto fails to disclose the moving step doesn't begin until the completion of the raising step. Such recitation of the moving step after the completion of the raising step never recited or positively pointed out in the claims as applicant and applicant' representative has argued.

³ Office Action pg. 2 lines 15-15, citing Sasamoto '541 col. 3 lines 56-61.

(Office Action pg. 5 lines 11-15)

Applicant respectfully reiterates that the disputed feature actually is explicitly recited, because the *raising* step provides the transducer at the maximum fly height and the *moving* step occurs while the transducer is at the maximum fly height.

Section 102 Rejection Over Sasamoto '541

Claim 9 stands rejected as allegedly being anticipated by Sasamoto '541. Applicant respectfully traverses this rejection because it is unsubstantiated by evidence. Via the telephone interview request submitted herewith, Applicant respectfully seeks clarification as to whether the Office agrees that the rejection is unsubstantiated.

Applicant respectfully reiterates that claim 9 recites a routine in terms of *steps for associating* in accordance with Section 112(6).⁴ When properly construed, claim 9 covers the disclosed acts and equivalents thereof that are capable of *associating a spatial separation between the transducer and the storage medium in relation to a direction of moving the transducer across the storage medium*.

In attempting to substantiate this rejection the Office Action only points to the microcomputer 22 and a description of how it interacts with the memory 24 to control the spindle motor and the pulse motor.⁵ However, the Office Action offers no evidence that Sasamoto '541 discloses, or is even capable of, *associating a spatial separation between the transducer and the storage medium in relation to a direction of moving the transducer across the storage medium* as claimed. In view of the evidence to the contrary, as set forth

⁴See Pre-Brief Request of 7/5/2006 ppg. 3-4; Applicant's Response of 6/5/2006 ppg. 12-14; Applicant's Response of 1/18/2006 ppg. 11 and 13-14.

above that Sasamoto '541 neither discloses nor is capable of the recited function, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 9 and the claims depending therefrom.

Section 102 Rejection Over McNeil '311

Claims 9-12 and 18-20 stand rejected as allegedly being anticipated by McNeil '311. Via the telephone interview request submitted herewith, Applicant respectfully seeks clarification as to whether the Office agrees that the rejection of claims 9 and 18 are based upon a paraphrase of the claim language and not the claim language itself, clarification as to whether the Office agrees that claim 9 properly does not positively recite acts in support of the claimed function in accordance with Section 112(6), and clarification as to whether the Office agrees that claim 18 does positively recite the spatial characteristics of the first and second separations with respect to the nominal data transfer separation.

Applicant respectfully reiterates that the Office has not made a case for anticipation by failing to substantiate any evidence that McNeil '311 discloses at least the following recited features of these claims:⁶

claim 9
a control element executing a move cycle routine by steps for associating a spatial separation between the transducer and the storage medium in relation to a direction of moving the transducer across the storage medium.

claim 18
An apparatus comprising circuitry configured to spatially separate a transducer from a storage medium by a first separation that is greater than a nominal data transfer

⁵ Office Action pg. 3 line 22 to pg. 4 line 2, citing element 22 and col. 3 lines 42-52.

⁶ Applicant's Response of 6/5/2006 ppg. 12-16.

separation, to thereafter move the transducer adjacent a selected portion of the storage medium at the first separation, to thereafter lower the transducer to a second separation that is less than the nominal data transfer separation, and to thereafter move the transducer across the storage medium at the second separation.

As for claim 9, Applicant has already shown that even the passages of McNeil '311 relied on by the Office clearly disclose bidirectional sweeping at all fly heights, not associating the fly height with the direction of sweeping as claimed.⁷

As for claim 18, Applicant has also already shown that even the passages of McNeil '311 relied on by the Office clearly disclose that the spatial separation is the same as the head is moved in both directions across the disc.⁸

In attempting to support the rejection the Office again bases its claim interpretation upon a paraphrase of the claim language, not the claim language itself, effectively resulting in ignoring explicitly recited claim language:

Regarding claims 9-12 and 18-20: McNeil discloses a data storage device with a transducer and a storage medium along two dimensions with respect to each other in a data transfer relationship and control element that control the execution of the move cycle routine that across the storage medium (see figure 1; and; col. 2, lines 14-34; col. 3 lines 53-66; col. 4 lines 44-56 and the abstract of McNeil). (Office Action pg. 4 lines 5-9)

In view of the dispositive evidence that McNeil '311 does not disclose the recited features of claims 9 and 18, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 9 and 18 and the claims depending therefrom.

⁷ See Applicant's Pre-Brief Request ppg. 3-4; Applicant's Response of 6/5/2006 ppg. 12-14.

⁸ See Applicant's Pre-Brief Request pg. 5; Applicant's Response of 6/5/2006 ppg. 15-16.

Also in attempting to support the rejection the Office Action calls into question why the specific acts contemplated by the *steps for associating* element in claim 9 are not positively recited:

Regarding claim 9 of the remarks (filed on 7/5/06): applicant and applicant's representative argued that McNeil fails to disclose the "associating a spatial separation between the transducer and the storage medium in relation to a direction of moving the transducer across the storage medium." Moreover, applicant and applicant's representative further argue that spatial separation (fly height or head/disk spacing) increases in a single pass/path (single swept) or one directional of the travel of the head in respective to the disk surface (i.e. the spacing of the head/disk increases from the inner diameter to the outer diameter (radial position) of the disk in one sweeping path)). Such distinction is not positively recited in the recitations of the claims.
(Office Action pg. 6 lines 1-9, emphasis added)

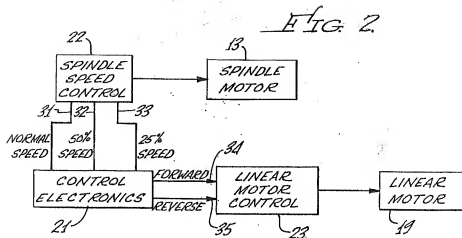
Applicant respectfully reiterates that in claim 9 it has opted to recite language in "steps for" language in accordance with Section 112(6) which, when properly construed, covers the disclosed acts and equivalents thereof that are capable of the recited function.⁹ Section 112(6) expressly prohibits the "steps for" element from positively reciting acts in support of the recited function. Thus, the Office Action's claim interpretation, if followed, would remove claim 9 from the purview of Section 112(6), contrary to Applicant's intention.

⁹ See Pre-Brief Request of 7/5/2006 ppg. 3-4; Applicant's Response of 6/5/2006 ppg. 12-14; Applicant's Response of 1/18/2006 ppg. 11 and 13-14.

Also in attempting to support the rejection the Office Action calls into question whether the spatial characteristics of the first and second spatial separations with respect to the nominal separation are positively recited by the language of claim 18:

Regarding claim 18 of the remarks (filed on 7/5/06): applicant and applicant's representative argued that McNeil fails to disclose the "...spatially separate a transducer from a storage medium by a first separation...move the transducer...at the first separation...lower the transducer to a second separation...move transducer across the storage medium at the second separation." Moreover. Applicant and applicant's representative further argued that the first separation is upwardly direction (raising vertically or higher than the nominal fly height or above the nominal data transfer separation baseline) and the second separation is downwardly direction (vertically downward or lower than the nominal fly height or below the nominal data transfer separation baseline) in a single path. Such distinctions are not positively recited in the claims. (Office Action pg. 6 lines 10-20, emphasis added)

However, the language of claim 18 explicitly recites *a first separation that is greater than a nominal data transfer separation* and *a second separation that is less than the nominal data transfer separation*. This is distinguishable from McNeil '311 which only discloses the separation being varied by less than the nominal data transfer operation, as is evident by the 50% (item 32) and 25% (item 33) speed taps with respect to the normal speed tap (item 31) in FIG. 2 and the descriptions thereof:



Conclusion

This is a complete response to the Office Action mailed April 11, 2007. Applicant respectfully requests reconsideration and withdrawal of all rejections.

The Applicant has also included herewith a request for telephone interview with Mr. H. Nguyen to discuss the merits of this case. The telephone interview is necessary and appropriate because of the number and nature of unresolved issues that exist this far into prosecution. Applicant has previously requested a telephone interview to discuss these issues in two previous responses, neither of which was granted.¹⁰ Following is a summary of issues that need to be resolved in the requested interview:

1. Clarification as to whether Applicant's amendment to claim 1 in its response of 6/5/2006 is entered.
2. Concerning the 103 rejection of claim 1, clarification as to whether the Office agrees that the raising step is a condition precedent to the moving step.

3. Concerning the 102 rejection of claim 9 over Sasamoto '541, clarification as to whether the Office agrees that the rejection is unsubstantiated.

4. Concerning the 102 rejection of claims 9 and 18 over McNeil '311, clarification as to whether the Office agrees that the rejection is based upon a paraphrase of the claim language and not the claim language itself.

5. Concerning the 102 rejection of claim 9 over McNeil '311, clarification as to whether the Office agrees that claim 9 properly does not positively recite acts in support of the claimed function in accordance with Section 112(6).

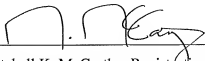
6. Concerning the 102 rejection of claim 18 over McNeil '311, clarification as to whether the Office agrees that claim 18 does positively recite the spatial characteristics of the first and second separations with respect to the nominal data transfer separation.

¹⁰ Applicant's Responses of 6/5/2006 and 1/18/2006.

The Office is invited to contact the undersigned regarding any question about this response or any other matter related to this case.

Respectfully submitted,

By: _____



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